



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/724,692	12/02/2003	Kathrin Michl	246049US0	1976
22850	7590	02/09/2006	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			JACKSON, MONIQUE R	
		ART UNIT	PAPER NUMBER	
		1773		

DATE MAILED: 02/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/724,692	MICHL ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Monique R. Jackson	1773	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### **Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)  Responsive to communication(s) filed on 04 November 2005.

2a)  This action is **FINAL**.                    2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## **Disposition of Claims**

4)  Claim(s) 1,2 and 4-39 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5)  Claim(s) \_\_\_\_\_ is/are allowed.

6)  Claim(s) 1,2 and 4-39 is/are rejected.

7)  Claim(s) \_\_\_\_\_ is/are objected to.

8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on \_\_\_\_\_ is/are: a)  accepted or b)  objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All    b)  Some \* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)  Notice of References Cited (PTO-892)  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3)  Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 11/05.

4)  Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_ .  
5)  Notice of Informal Patent Application (PTO-152)  
6)  Other: \_\_\_\_ .

**DETAILED ACTION**

1. The amendment filed 11/4/05 has been entered. Claim 3 has been canceled. New claims 20-39 have been added. Claims 1, 2 and 4-39 are pending in the application.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

***Claim Rejections - 35 USC § 102***

3. Claims 1, 2 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by EP 0 404 960 (EP'960). EP'960 teaches a thermosetting powder composition comprising a) an ethylene copolymer containing 0.5 to 10wt% of an acid anhydride, preferably maleic anhydride, and b) an epoxy resin, and c) a curing agent for the epoxy resin, with the compounding ratio of a) to b) being 0.1 to 1.0 by weight, EP'960 teaches that suitable amount of c) are as presented in the examples (less than 20wt% in total), and further includes examples including comparative examples that read upon the instantly claimed invention (Abstract; Page 7, lines 8-11; Page 8, Page 9, second paragraph; Page 11; Tables 1 and 2.)
4. Claims 8-13, 16, 17, 19, 28, 30-37 and 39 are rejected under 35 U.S.C. 102(b) as being anticipated by Muskat (USPN 3,085,986.) Muskat teaches a powder mixture, suitable as a substitute for formaldehyde binders, comprising a styrene/maleic anhydride copolymer copolymerized in molar proportions of from 1:2 to 2:1, having a melting point preferably below 225°C; and as an a crosslinking agent for said copolymer, an aliphatic polyhydric alcohol which is reactive in situ with said copolymer at a temperature above about 130°C, such as glycols like trimethylolethane, trimethylolpropane, neopentyl glycol, propylene glycol, polypropylene glycol, polyethylene glycol, 1,5 pentane diol and hexylene glycol, preferably glycol solid at room

temperature and present in stoichiometric proportions (*hence reads upon the mol% and wt % ranges as instantly claimed*; Abstract; Col. 1, lines 30-34; Col. 4, lines 33-55; Col. 5-Col. 7, line 7.) Muskat further teaches that the composition may include fillers up to about 65wt% including wood flower and cellulose, milled and chopped glass fibers, etc (*hence reads upon instant claims 16, 17, 19 and 39*; Col. 8, lines 21-33.) With respect to the storage modulus limitations and melting/softening temperatures as instantly claimed, the Examiner takes the position that the composition taught by Muskat would inherently possess the instantly claimed modulus and temperature properties given that the materials and amounts are the same as the instant invention. Further, with regards to the limitations recited in Claims 10 and 30-32, the Examiner notes that the  $\alpha$ -olefin is not positively recited given that the  $\alpha$ -olefin is optional in instant Claim 8 considering the copolymer may be formed of maleic anhydride and styrene only.

***Claim Rejections - 35 USC § 103***

5. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Muskat. The teachings of Muskat are discussed above. Though Muskat teaches particular crosslinking agents that read upon the instantly claimed invention and recite that the amount of the crosslinking agent is preferably in stoichiometric proportions to the styrene/maleic anhydride that comprises a 1:2 to 2:1 styrene:maleic anhydride ratio, Muskat does not specifically teach that the copolymer is present in an amount of 40-60wt% with the crosslinker present in an amount of 40-60wt% as instantly claimed. However, one having ordinary skill in the art at the time of the invention would have been motivated to determine the optimum amount of crosslinker, including excess crosslinker as needed, to provide the desired crosslinking properties including curing time and crosslink density, based on the particular crosslinker selected from those recited by Muskat.

6. Claims 1, 2, and 4-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dreher et al (USPN 6,716,922, English equivalent of WO01/27198 printed 4/19/01.) Dreher et al teach a formaldehyde-free thermally hardenable polymer binding agent in the form of a powder, in particular for fibrous and grainy materials including wood chips, wood fibers, glass fibers, etc.; wherein the binding agent includes 87.5-12.5wt% of polymer A1, 87.5-12.5wt% A2, 0.1 to 30wt%, of at least one amine containing hydroxyl group, wherein the polymer A1 is preferably a copolymer of 80-100wt% of a principal monomer including styrene and/or olefins such as ethylene, propylene, butene, and isotene (*reads on the instantly claimed copolymer*); with suitable comonomers including carboxylic acids or their anhydrides including maleic anhydride (Abstract; Claims; Col. 3-4; Col. 22, lines 23-35; Col. 23, lines 37-35; Col. 23, line 65-Col. 24, line 4; Col. 24, lines 44-50.) Dreher et al further teach that the polymer A2 includes at least one amine with at least one hydroxyl group incorporated therein (*reads upon the instantly claimed crosslinker*), with particularly maleic anhydride and may also include 0 to 20wt% of other monomers such as styrene, olefins, (meth)acrylates, and mixtures thereof (Col. 6-9.) Dreher et al also teach examples utilizing styrene in polymer A1 and maleic anhydride in polymer A2 but do not specifically teach that polymer A1 includes a copolymer of maleic anhydride with olefins and/or styrene as instantly claimed. However, Dreher et al clearly teach that maleic anhydride is a suitable comonomer with the preferred principal monomer styrene and/or other principal monomers such as the cited olefins, and hence one having ordinary skill in the art at the time of the invention would have been motivated to utilize styrene and/or any olefin as the comonomer with maleic anhydride particularly considering SMA and maleic anhydride/α-olefin copolymers are known thermosetting copolymers utilized in the art. Dreher et al further teach that other

crosslinkers or reaction accelerants may be included in the composition but do not specifically teach the crosslinkers as recited in instant claims 23 and 33, however, the claimed crosslinkers are known crosslinking agents for maleic-anhydride copolymers and would have been obvious to one having ordinary skill in the art at the time of the invention. Further, one having ordinary skill in the art at the time of the invention would have been motivated to utilize routine experimentation to determine the optimum composition of A1 and A2 to provide the desired curing and mechanical properties for a particular end use.

***Response to Arguments***

7. Applicant's arguments filed 11/4/05 have been considered but are moot in view of the new ground(s) of rejection.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monique R. Jackson whose telephone number is 571-272-1508. The examiner can normally be reached on Mondays-Thursdays, 8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney can be reached on 571-272-1284. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Monique R. Jackson  
Primary Examiner  
Technology Center 1700  
February 6, 2006